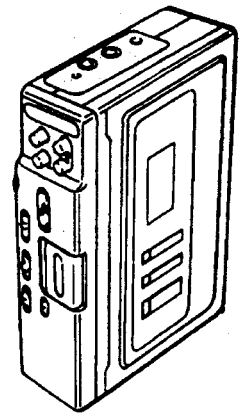
S/M Code No. 0052 DATE OF ISSUE 3/1992 - I

AIWA®

HS-F160

SERVICE MANUAL



STEREO CASSETTE RECORDER

• BASIC TAPE MECHANISM : α - 1 • TYPE. Y

♠ This service manual contains service information for only altered and added sections of Model HS - F160.
If requiring other service information, see the service manual of Model HS - F150.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

DISASSEMBLY INSTRUCTIONS

1. "Panel, Operate" and "Cabinet Rear ASSY" Removal (See Figure – 1)

   1) Remove 4 screws (Ⓐ× 3, Ⓑ× 1) and release the hook1 and open the "Lid Cassette ASSY", then remove the "Panel, Opearte" in the direction of arrow ①.

   2) Remove 3 screws (Ⓒ× 1, Ⓓ× 2) and release the hook2, then remove the "Cabinet Rear ASSY" in the direction of arrow ②.

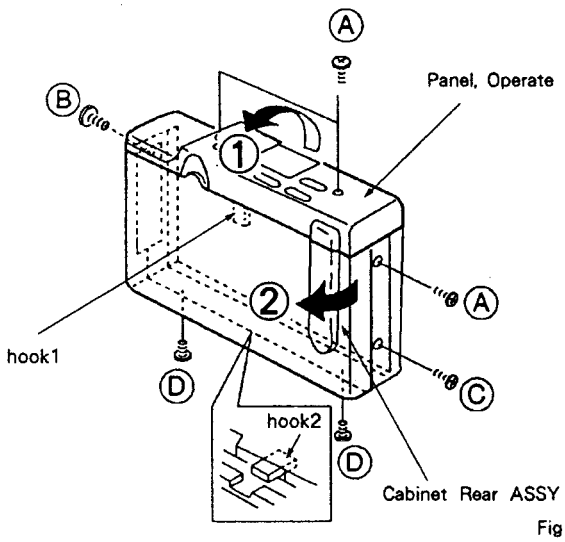


Fig – 1

2. "Main Circuit Board" Removal (See Figure – 2)

   1) Remove 5 screws (Ⓐ× 2, Ⓑ× 2, Ⓒ× 1) and remove "Belt A2" and lift up in the "Main Circuit Board" and "Frame, Center" together in the direction of arrow①.

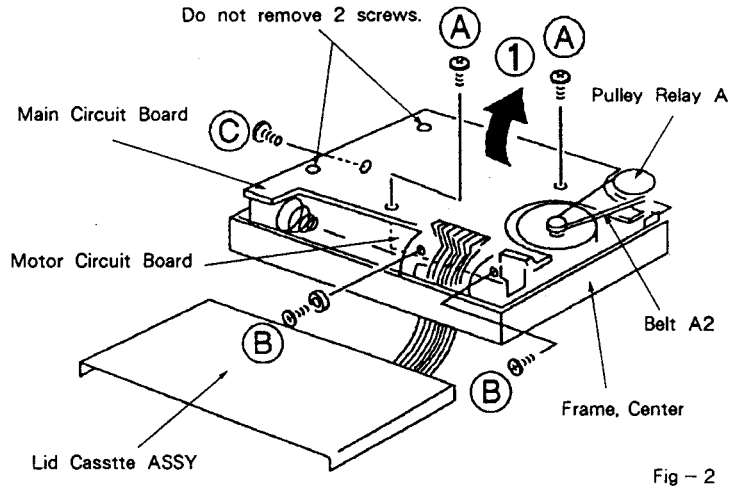


Fig – 2

Note : Connect the "Main Circuit Board" and "Mechanism ASSY" using a "Shorting Clip", etc. for "Grounding Wire" during checking (See Figure – 3)

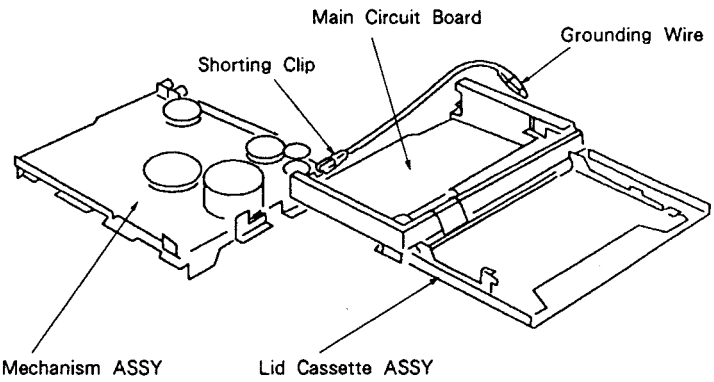
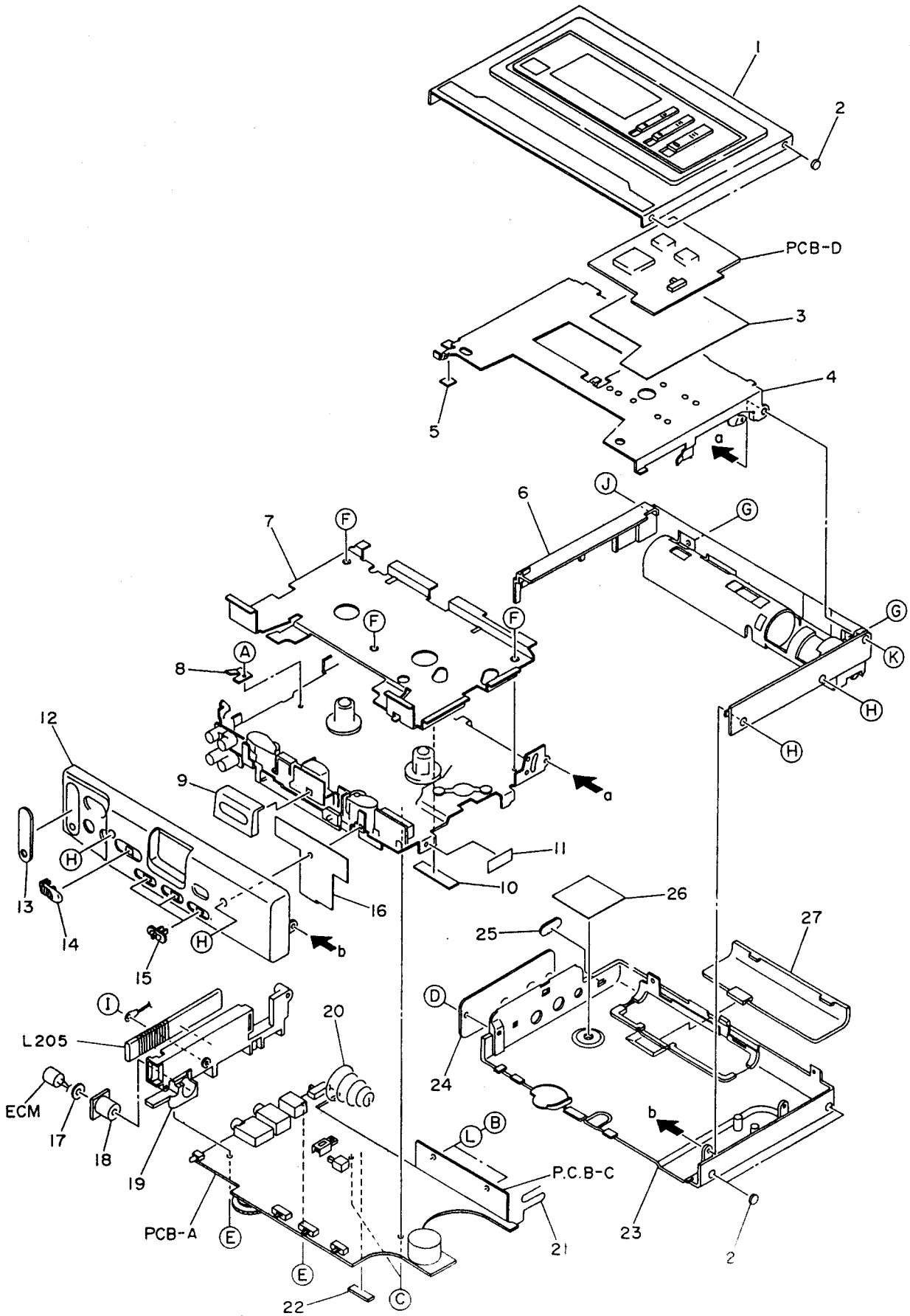


Fig – 3

EXPLODED VIEW – 1

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	87-263-500-319	V(1)+1.4-1.4CR	G	87-067-394-019	S-SCREW +1.4-2.5(B)
B	87-263-507-319	V(1)+1.4-3CR	H	87-067-334-010	S-SCREW +1.4-3.5(B)
C	87-067-535-010	VT1.4-3.5(C)HL	I	87-067-326-019	S-SCREW +1.4-3.5(C)
D	87-067-534-019	VT1.4-6(B)HL	J	84-468-207-010	HINGE SCREW(B)
E	87-351-529-319	VT_2(1)+1.7-4(B)	K	87-067-351-019	CABINET SCREW M1.4(B)
F	87-231-501-319	Q+1.4-1.6(B)	L	87-067-423-010	SPRING WASHER 1.4

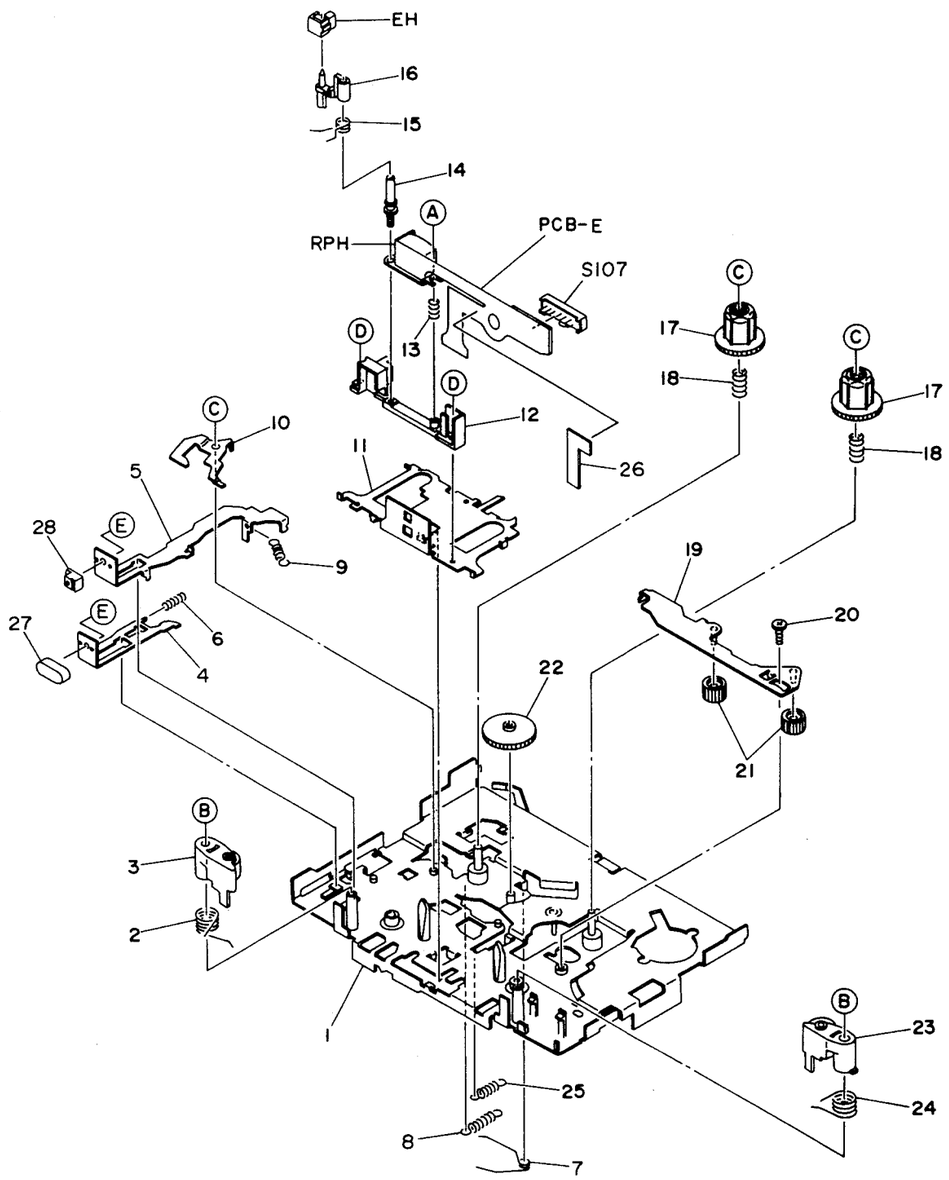


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	1-1	★09-027-905-010	LID CASSETTE ASSY	*	1
	1-2	★84-448-010-019	FOOT, RUBBER		4
	1-3	★84-498-204-019	SHEET, INSULATION EQ		1
	1-4	★84-498-202-019	HOLDER CASSETTE ASSY		1
	1-5	★84-468-251-019	SHEET, PVC 3-3		1
	1-6	★81-HFC-008-119	FRAME, CENTER	*	1
	1-7	★84-498-018-119	PLATE, DEORATIVE CASSETTE		1
	1-8	★84-463-209-110	P-SPRING, POP UP		1
	1-9	★84-468-042-019	BUTTON, PLAY		1
	1-10	★84-468-212-019	MYLAR 20-6		1
	1-11	★84-468-252-019	SHEET, MYLAR 4-7-0.1		1
	1-12	★81-HFC-006-019	PANEL, OPERATE	*	1
	1-13	★84-498-010-019	PLATE, OPERATE		1
	1-14	★84-468-051-019	KNOB, SLIDE DIRECTION		1
	1-15	★84-468-045-019	KNOB, SLIDE A		3
	1-16	★84-468-627-219	SHEET, SHIELD HEAD		1
	1-17	★82-690-240-019	RUBBER, SPACER 5-2.1-1		1
	1-18	★82-652-218-110	HOLDER, ECM		1
	1-19	★84-468-203-019	HOLDER, ANTENNA		1
	1-20	★84-468-210-119	C-SPRING, BATTERY		1
	1-21	★84-468-209-019	TERMINAL, BATTERY		1
	1-22	84-506-212-119	CUSHION, BATTERY		1
	1-23	81-HFC-009-119	CABINET REAR ASSY	*	1
	1-24	★81-HFC-007-119	PLATE, SIDE	*	1
	1-25	★84-498-005-019	SHEET, CABINET		1
	1-26	★84-400-609-019	SHEET, INSULATION B		1
	1-27	★81-HFC-005-019	LID, BATTERY	*	1

EXPLODED VIEW – 2

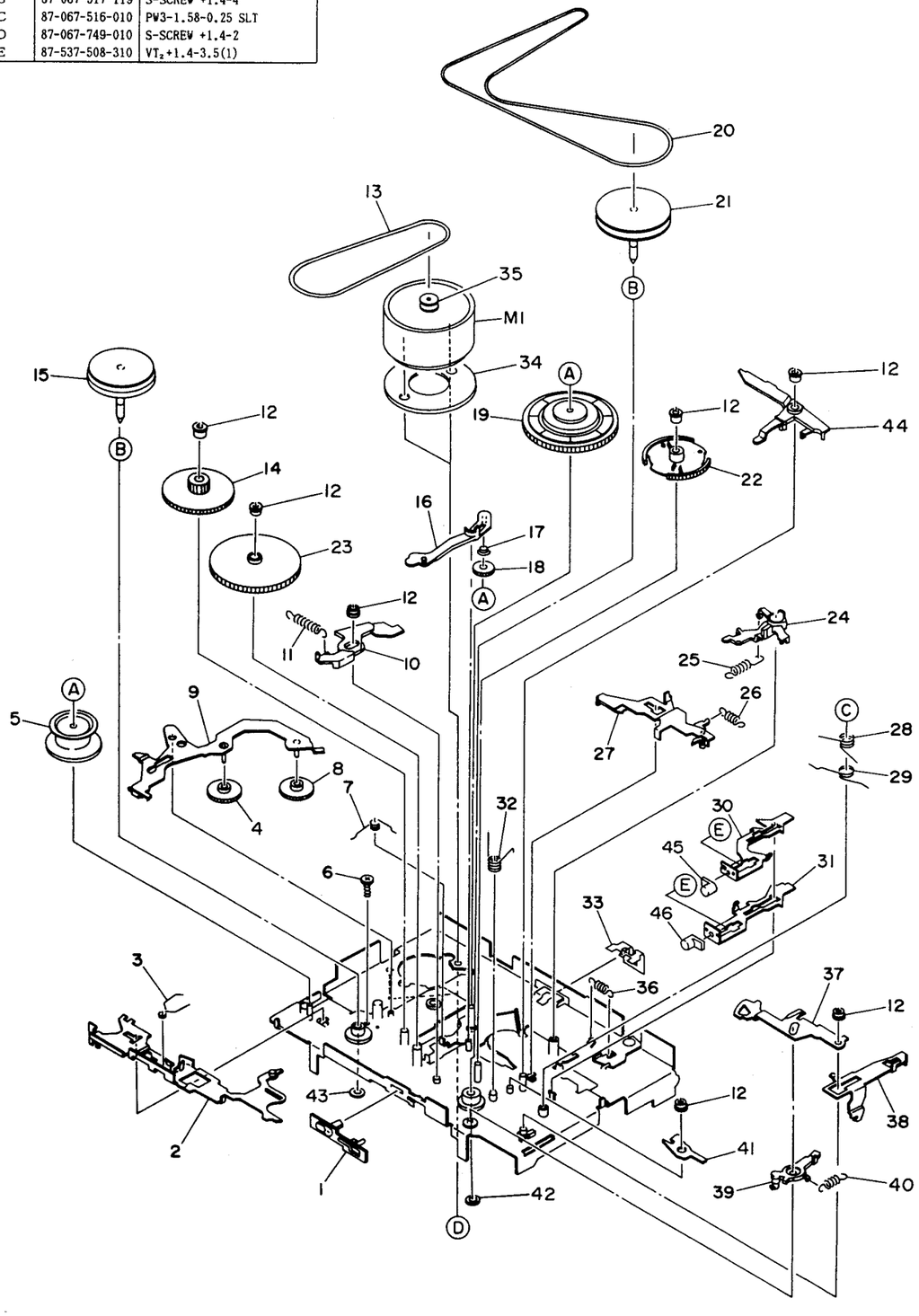
REF.NO.	PART NO.	DESCRIPTION
A	87-067-447-010	PW 3-1.215-0.25 SLT
B	87-067-529-019	PW 2.1-3.5-0.3
C	87-067-487-019	S-SCREW +1.7-3
D	87-233-526-319	Q(1)+1.7-2.8(CR)
E	87-357-508-310	VI_2+1.4-3.5(1)



PART NO. CHANGED TO	REF NO.	PART NO	DESCRIPTION	COMMON MODEL	Q. TY
	2-1	★86-541-502-610	OUTSERT CHASSIS ASSY AR		1
	2-2	★86-541-338-119	T-SPRING, PINCH R P		1
	2-3	★86-541-582-010	PINCH LEVER R ASSY		1
	2-4	★86-541-465-110	PLATE, PUSH BUTTON STOP		1
	2-5	★86-541-538-010	PLATE, PUSH BUTTON REC		1
	2-6	★86-541-329-019	C-SPRING, STOP		1
	2-7	★86-541-347-219	T-SPRING, FR LEVER		1
	2-8	★86-541-336-010	E-SPRING, REC		1
	2-9	★86-541-312-110	E-SPRING, REC LOCK		1
	2-10	★86-541-277-210	LEVER, REC LOCK		1
	2-11	★86-541-270-710	CHASSIS, SLIDE A		1
	2-12	★86-541-283-110	GUIDE, TAPE		1
	2-13	★86-541-318-119	C-SPRING, AZIMUTH		1
	2-14	★86-541-369-019	SCREW, EH M1.4		1
	2-15	★86-541-344-010	T-SPRING, EH LEVER		1
	2-16	★86-541-287-310	LEVER, EH		1
	2-17	★86-541-236-010	GEAR, REEL PLATFORM		2
	2-18	★86-541-328-119	C-SPRING, REEL PLATFORM		2
	2-19	★86-541-509-110	PLATE FR ASSY B		1
	2-20	★86-541-519-019	S-SCREW, FR		1
	2-21	★86-541-520-110	GEAR, FR 2		2
	2-22	★86-541-239-010	GEAR, REW		1
	2-23	★86-541-581-010	PINCH LEVER F ASSY		1
	2-24	★86-541-314-119	T-SPRING, PINCH F R		1
	2-25	★86-541-331-010	E-SPRING, ACTUATING		1
	2-26	★86-541-586-119	MYLAR, FLEXIBLE B		1
	2-27	★84-498-015-019	PUSH BUTTON STOP		1
	2-28	★84-498-616-319	PUSH BUTTON REC		1

EXPLODED VIEW – 3

REF.NO.	PART NO.	DESCRIPTION
A	87-268-512-319	V(3)+1.4-5.5
B	87-067-517-119	S-SCREW +1.4-4
C	87-067-516-010	PW3-1.58-0.25 SLT
D	87-067-749-010	S-SCREW +1.4-2
E	87-537-508-310	VT$_2$+1.4-3.5(1)



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	3-1	★84-498-017-119	KNOB, SLIDE MODE		1
	3-2	★86-541-222-710	PLATE PINCH SELECT ASSY		1
	3-3	★86-541-320-710	T-SPRING, PLAY LEVER		1
	3-4	★86-541-477-210	GEAR, PLAY M		1
	3-5	★86-541-231-010	COUPLER PULLEY A		1
	3-6	★86-541-423-019	SCREW, PLAY		1
	3-7	★86-541-334-210	T-SPRING, AUTO LEVER		1
	3-8	★86-541-242-310	GEAR, PLAY		1
	3-9	★86-541-479-310	LEVER PLAY ASSY M		1
	3-10	★86-541-288-410	LEVER, MODE SELECT		1
	3-11	★86-541-341-010	E-SPRING, MODE CHANGE		1
	3-12	86-541-376-110	COLLAR, PW-BOARD P		7
	3-13	86-541-370-010	BELT, A2		1
	3-14	★86-541-240-010	GEAR, REDUCTION		1
	3-15	86-541-401-410	FLYWHEEL ASSY FA		1
	3-16	★86-541-285-110	LEVER, AUTO		1
	3-17	★86-541-325-010	C-SPRING, AUTO GEAR		1
	3-18	★86-541-521-010	GEAR, AUTO 2		1
	3-19	★86-541-517-110	GEAR CLUTCH ASSY 2		1
	3-20	86-541-368-010	BELT, A1		1
	3-21	★86-541-402-210	FLYWHEEL ASSY RVS		1
	3-22	★86-541-238-510	GEAR, CAM R		1
	3-23	★86-541-237-210	GEAR, AUTO CAM		1
	3-24	★86-541-292-310	LEVER, REC EJECT AR		1
	3-25	★86-541-297-210	E-SPRING, REC EJECT		1
	3-26	★86-541-332-119	E-SPRING, PLATE LOCK		1
	3-27	★86-541-461-110	PLATE EJECT ASSY AN		1
	3-28	★86-541-349-019	T-SPRING, FR BUTTON		1
	3-29	★86-541-339-010	T-SPRING, TRIGGER		1
	3-30	★86-541-467-210	PLATE, PUSH BUTTON REW		1
	3-31	★86-541-466-210	PLATE, PUSH BUTTON FF		1
	3-32	★86-541-345-310	T-SPRING, SELECT CAM		1
	3-33	★86-541-323-010	P-SPRING, CASSETTE SUPPORT		1
	3-34	---	PLATE, SHIELD		1
	3-35	★86-541-507-010	PULLEY, MOTOR S3		1
	3-36	★86-541-330-119	E-SPRING, REC BLOCKING		1
	3-37	★86-541-522-110	LEVER, EH RETURN 2		1
	3-38	★86-541-263-210	PLATE, EJECT		1
	3-39	★86-541-286-110	LEVER, DIRECTION		1
	3-40	★86-541-343-010	E-SPRING, DIRECTION		1
	3-41	★86-541-293-310	LEVER, TRIGGER LOCK		1
	3-42	---	SHEET, SOMA 1.63-3.2-0.3		1
	3-43	---	SHEET, SOMA, 3-1.5-0.3		1
	3-44	★86-541-284-310	LEVER, TRIGGER		1
	3-45	★84-498-014-019	PUSH BUTTON REW		1
	3-46	★84-498-013-019	PUSH BUTTON FF		1
		★09-027-568-010	COLLAR, PW-BOARD (PJ) KIT	*	1

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	1	★81-HFC-901-019	INSTRUCTION BOOKLET, Y	※	1
	2	★87-048-205-019	HP – 22N (BK) [Y1]		1
	3	★87-048-213-019	HP – M270 [Y]		1

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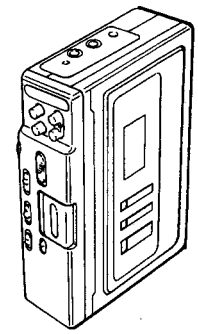
S/M Code No.89-002 DATE OF ISSUE 2/1989-I

AIWA®

HS-F150

SERVICE MANUAL



STEREO CASSETTE RECORDER

• BASIC TAPE MECHANISM : α −1 • TYPE. Y

SPECIFICATIONS

Track arrangement:	4-track, 2-channel, stereo
Frequency range:	40 to 12,500 Hz (NORMAL tape) 40 to 16,000 Hz (METAL tape)
Maximum output:	15mW + 15mW (EIAJ/32Ω) 20mW + 20mW (EIAJ/16Ω)
Power source:	Battery DC 3V LR-6 (SUM-3, AA, R6) × 2 Domestic AC power (using AC adaptor)
Battery life:	• Using manganese batteries (R6, SUM-3, AA) Approx. 5.5 hours (EIAJ, recording mode) Approx. 4.5 hours (EIAJ, 1mW output, playback mode) • Using alkaline batteries (LR-6, AM-3, AA) Approx. 11 hours (EIAJ, recording mode) Approx. 9 hours (EIAJ, 1mW output, playback mode)

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the DD symbol are trademarks of Dolby Laboratories Licensing Corporation.

AIWA Co., Ltd. Tokyo Japan

DISASSEMBLY INSTRUCTIONS

1. Operation Panel and Rear Cabinet Removal
   1) Remove 4 screws (Ⓐ x 3, Ⓑ x 1) and open the cassette lid, then remove the control panel in the direction of arrow ①. (See Figure 1)

   Note 1: The control panel is fitted to the rear cabinet by the hooks. It cannot be removed by pulling it straight up. Remove it gradually in the direction of arrow ① so as not to break the hooks.

   2) Remove 3 screws (Ⓐ' x 1, Ⓒ x 2) and release the hook (see the expanded figure), then remove the rear cabinet in the direction of arrow ②. (See Figure 1)

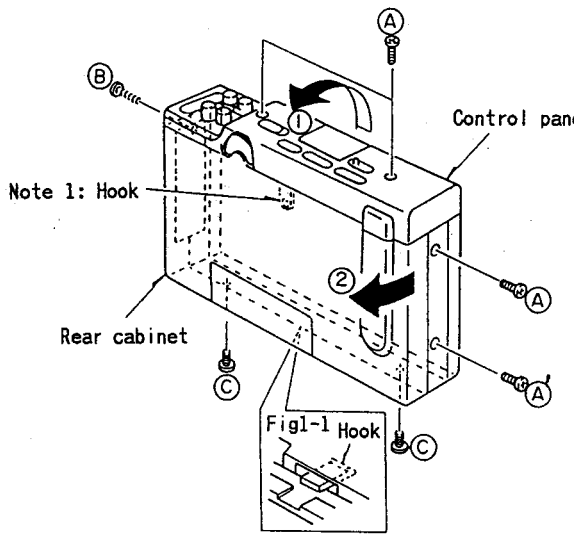


Fig-1

2. Main Circuit Board Removal
   1) Remove 6 screws (Ⓓ x 2, Ⓔ x 2, Ⓕ x 1, Ⓖ x 1).
   2) Remove belt A2 and raise the main circuit board in the direction of the arrow. (See Figure 2)

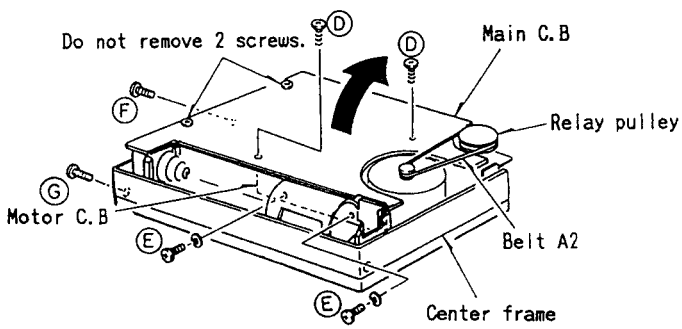


Fig-2

Note 2: Connect the circuit board and mechanism using a shorting clip, etc. for grounding during checking as shown in the figure. (See Figure 3)

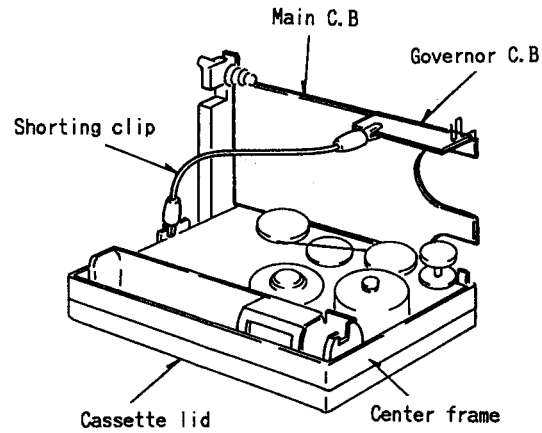
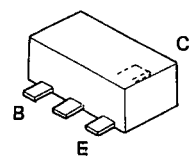


Fig-3



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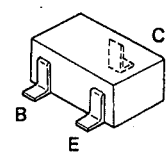

2SC2712
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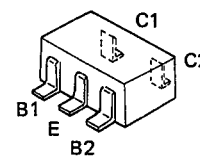
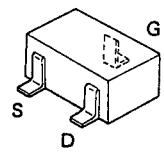
DTC114



FMG4

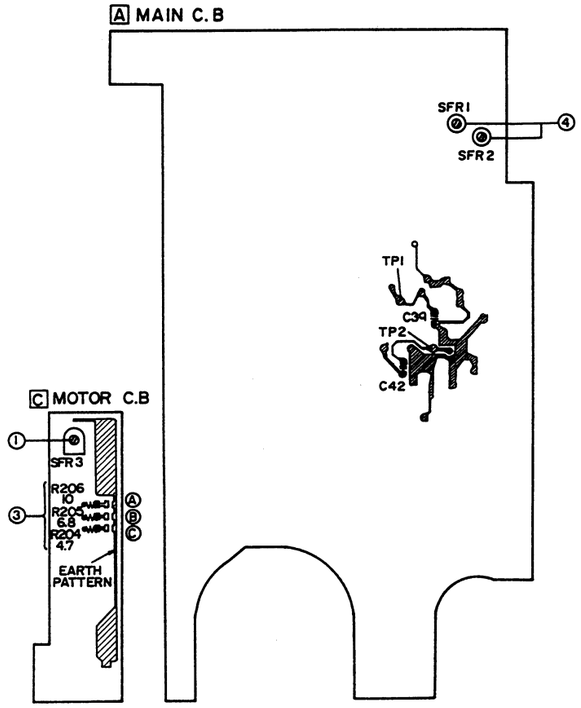


2SK209

ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
=== IC ===		
	87-001-351-019	IC,AN 6612S
	87-001-147-019	IC,BA1102FS
	87-020-505-019	IC,CX20023
	87-001-371-019	IC,LA4533M
=== TRANSISTOR ===		
	89-112-134-019	TRANSISTOR,2SA1213Y
	89-327-124-019	TRANSISTOR,2SC2712(Y)
	89-413-284-019	TRANSISTOR,2SD1328T
	89-502-095-019	TRANSISTOR,2SK209(GR)
	87-026-239-019	TRANSISTOR,DTC114TK
	87-026-299-019	TRANSISTOR,FMG4
=== DIODE ===		
	87-020-339-019	DIODE,CHIP 1SS226
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A	84-498-602-010	MAIN CIRCUIT BOARD
C1	*87-010-198-019	CAP,CHIP 0.022
C2	*87-010-198-019	CAP,CHIP 0.022
C3	*87-015-822-019	CAP,CHIP 0.022
C4	*87-015-822-019	CAP,CHIP 0.022
C5	*87-010-502-019	CAP,ELECT GAS 100-4
C6	*87-010-587-019	CAP,ELECT GAS 100-2
C7	*87-010-176-019	CAP,CHIP 680P
C8	*87-010-176-019	CAP,CHIP 680P
C9	*87-010-501-019	CAP,ELECT GAS 47-4
C10	*87-010-501-019	CAP,ELECT GAS 47-4
C11	*87-010-198-019	CAP,CHIP 0.022
C12	*87-010-198-019	CAP,CHIP 0.022
C13	*87-010-197-019	CAP,CHIP 0.01
C14	*87-010-197-019	CAP,CHIP 0.01
C15	*87-010-180-019	CAP,CHIP 1500P
C16	*87-010-180-019	CAP,CHIP 1500P
C17	*87-010-498-019	CAP,ELECT GAS 10-16
C18	*87-010-501-019	CAP,ELECT GAS 47-4
C19	*87-010-503-019	CAP,ELECT GAS 220-4
C20	*87-010-501-019	CAP,ELECT GAS 47-4
C21	*87-010-498-019	CAP,ELECT GAS 10-16
C22	*84-439-620-019	CAP,ELECT 470-4
C23	*87-010-452-019	CAP,CHIP 1U
C24	*87-010-452-019	CAP,CHIP 1U
C25	*87-010-170-019	CAP,CHIP 220P
C26	*87-010-180-019	CAP,CHIP 1500P
C27	*87-010-090-019	CAP,TANTALUM 4.7
C28	*87-010-197-019	CAP,CHIP 0.01
C29	*87-010-184-019	CAP,CHIP B 3300P
C30	*87-010-197-019	CAP,CHIP 0.01
C31	*87-012-141-019	CAP,CHIP S 0.22
C32	*87-010-503-019	CAP,ELECT GAS 220-4
C33	*87-010-452-019	CAP,CHIP 1U
C34	*87-010-452-019	CAP,CHIP 1U
C35	*87-010-452-019	CAP,CHIP 1U
C36	*87-010-452-019	CAP,CHIP 1U
C37	*87-010-178-019	CAP,CHIP 1000P
C38	*87-010-178-019	CAP,CHIP 1000P
C39	*87-010-178-019	CAP,CHIP 1000P
C40	*87-010-178-019	CAP,CHIP 1000P
C41	*87-010-193-019	CAP,CHIP 0.033
C42	*87-010-193-019	CAP,CHIP 0.033
C43	*87-010-186-019	CAP,CHIP 4700P
C44	*87-010-186-019	CAP,CHIP 4700P
C45	*87-010-497-019	CAP,ELECT 4.7-35
C46	*87-010-497-019	CAP,ELECT 4.7-35
C47	*87-010-197-019	CAP,CHIP 0.01
C48	*87-010-197-019	CAP,CHIP 0.01
C49	*87-010-193-019	CAP,CHIP 0.033
C50	*87-010-193-019	CAP,CHIP 0.033
C51	*87-010-196-019	CAP,CHIP 0.1
C52	*87-010-196-019	CAP,CHIP 0.1
C53	*87-010-587-019	CAP,ELECT GAS 100-2
C54	*87-010-499-019	CAP,ELECT GAS 22-6.3
C55	*87-012-141-019	CAP,CHIP S 0.22
C56	*87-012-141-019	CAP,CHIP S 0.22
C57	*87-010-588-019	CAP,ELECT GAS 220-2
C58	*87-010-588-019	CAP,ELECT 220-2
C59	*87-010-503-019	CAP,ELECT GAS 220-4
C60	*87-010-452-019	CAP,CHIP 1U
C61	*87-010-497-019	CAP,CHIP ELECT GAS 4.7-35
C62	*87-010-501-019	CAP,ELECT GAS 47-4
C63	*87-010-503-019	CAP,ELECT GAS 220-4
J1	87-049-767-010	JACK 3.5(MIC)
J2	87-049-861-019	JACK 3.5ST 2.5MM BK(PHONES)
J3	87-009-022-019	DC JACK(DC 3V)
L1	*87-007-230-019	COIL,CHIP BIAS OSC
LED1	87-020-520-019	LED TLR-226(OPE/BATT)
S1	87-036-083-019	PUSH SW,CHIP(POWER)
S2	87-036-082-010	SLIDE SW(REC/PB)
S3	87-031-816-019	SLIDE SW(PAUSE)
S4	87-031-816-019	SLIDE SW(DOLBY-NR)
S5	87-031-816-019	SLIDE SW(TAPE)
SFR1	*87-024-079-010	SFR,CHIP 5K
SFR2	*87-024-079-010	SFR,CHIP 5K
VR1	*87-024-123-019	VOLUME 20KA(VOLUME)
=== HEAD CIRCUIT BOARD SECTION ===		
PCB-B	84-468-615-010	HEAD CIRCUIT BOARD
RPH	87-046-315-010	R/P HEAD(W/PCB-B)
S6	86-541-602-019	SLIDE SW(DIRECTION)
TH1	*87-026-256-010	THERMISTOR HT-100
=== MOTOR CIRCUIT BOARD SECTION ===		
PCB-C	84-498-604-019	MOTOR CIRCUIT BOARD
C201	*87-015-933-019	CAP, CHIP TANTALUM 1-10
C202	*87-015-934-019	CAP,CHIP,TANTALUM 2.2-4
R207	*87-022-042-019	RES,CHIP MF 0.51
SFR3	*87-024-076-010	SFR,CHIP 1K
=== G. EQ CIRCUIT BOARD SECTION ===		
	84-479-601-019	G.EQ ASSY(W/PCB-D)
=== MISCELLANEOUS ===		
ECM	87-041-052-019	MIC ECM 60-H
EH	86-541-601-010	E HEAD
M1	87-045-295-019	MOTOR

ADJUSTMENT



1. Tape Speed Adjustment
   Settings : · Test tape : TTA-100(TTA-111S)
   · Adjustment location : SFR3
   Method : Play back the test tape, adjust for 3000Hz.

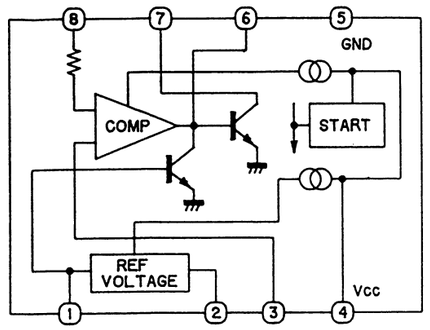
2. Azimuth Adjustment
   Settings : · Test tape : TTS-320(TTA-113B,TCC-152)
   · Adjustment location : Azimuth adjustment screw
   Method : Play back the 8kHz signal of the test tape, and adjust so that the output becomes maximum.

3. Motor Load Adjustment
   Refer to the service technical information REF NO. : SI-88-037-OP.

4. Dolby Level Adjustment
   Settings : · Test tape : TTS-200(TTA-161,TCC-130)
   · Test point : TP1(Lch),TP2(Rch)
   · Adjustment location : SFR1(Lch) SFR2(Rch)
   Method : Adjust SFR1(2) so that the voltage at TP1(2) is 100mV±5mV.

IC BLOCK DIAGRAM

IC, AN6612S



IC DESCRIPTION

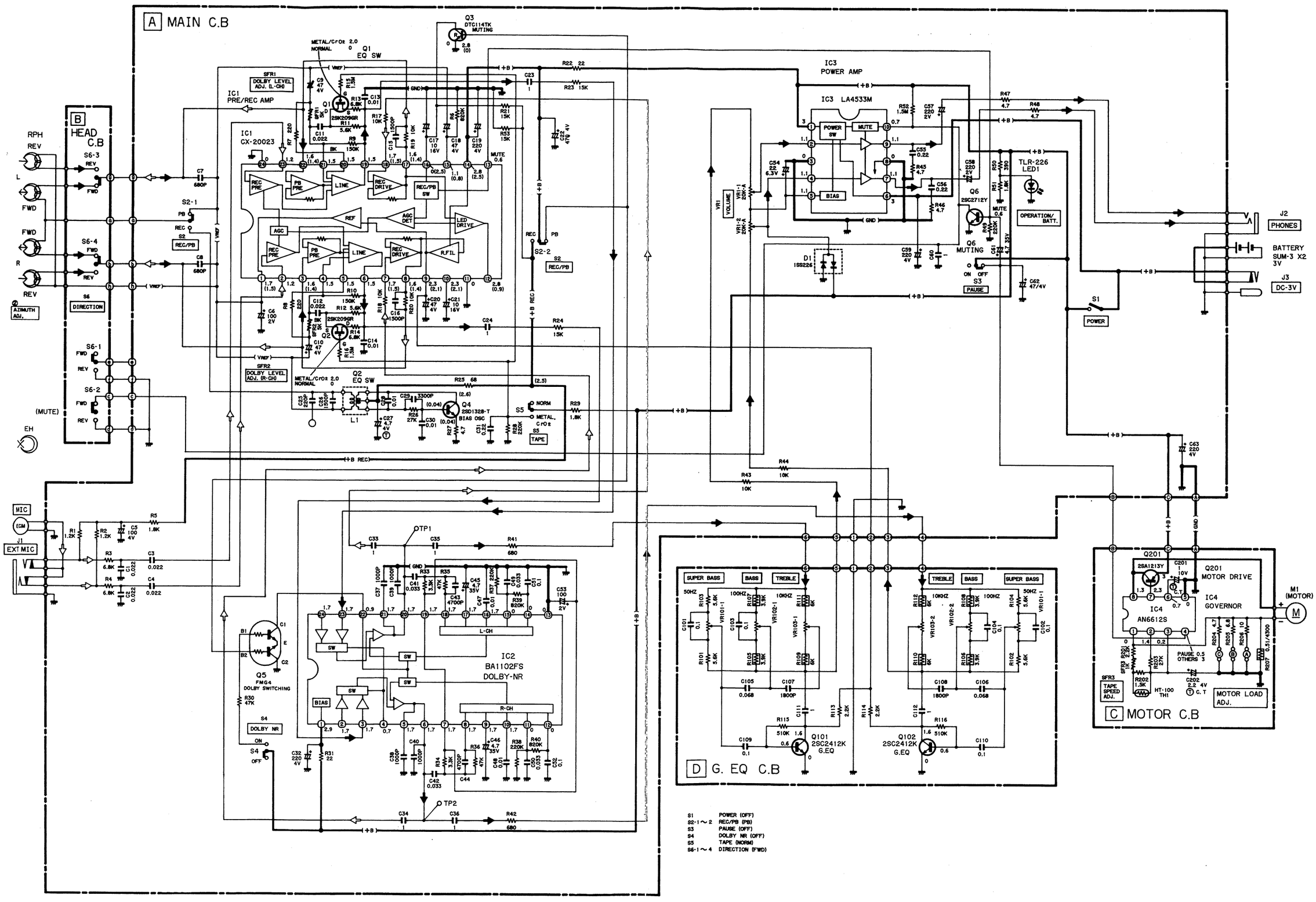
IC, AN6612S

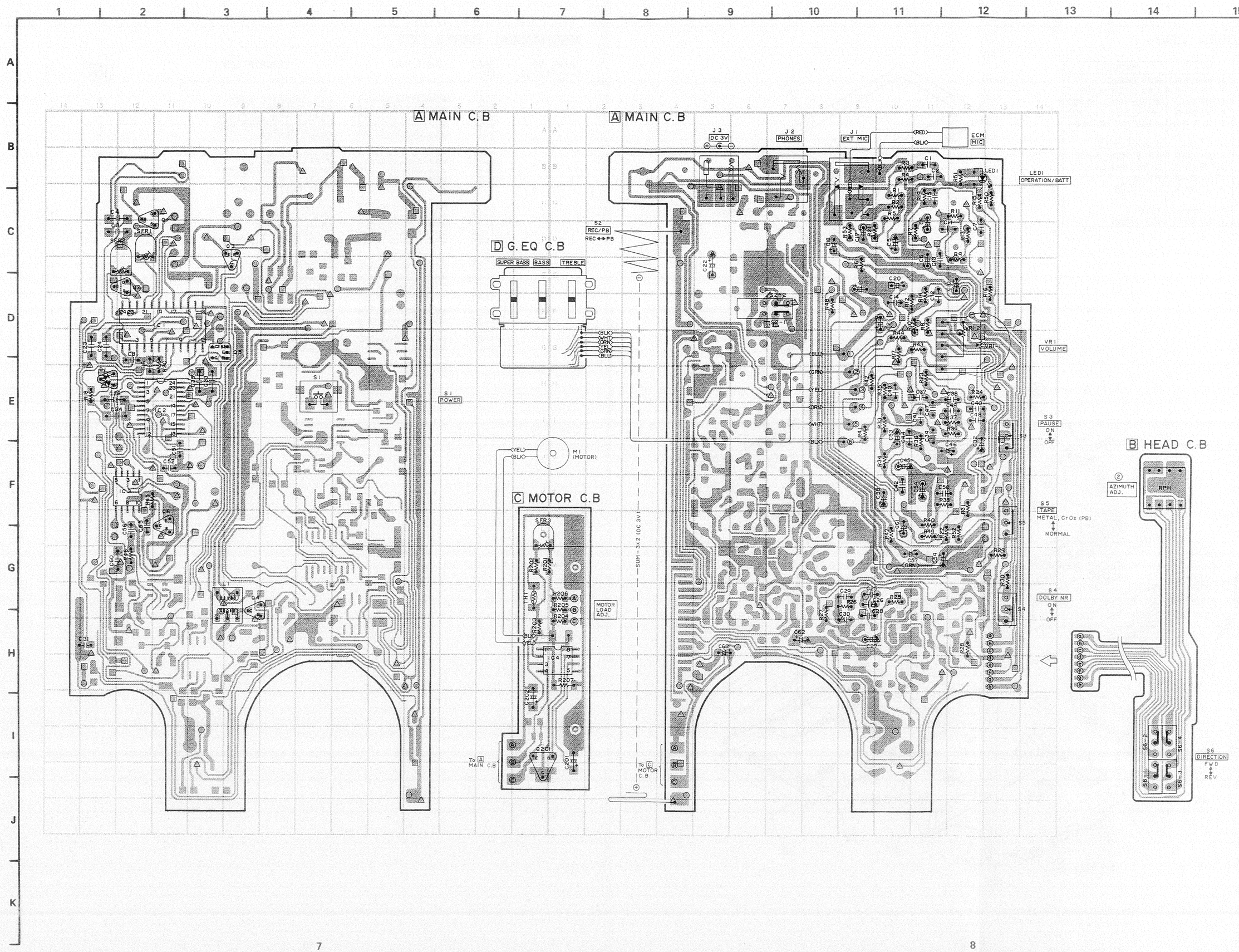
Pin No.	Pin Name	Description
1	VRN	Input terminal for motor current detection
2	VRP	Output terminal for reference voltage
3	VIN	Output terminal for reference voltage control
4	VCC	Power supply terminal
5	GND	GND terminal
6	VB	Terminal for prevention of oscillation
7	VBO	Output terminal for the motor speed of control
8	VM	Input terminal for the motor speed of detection

PRACTICAL SERVICE FIGURE

Record bias frequency :	52kHz
Erasing ratio :	More than 48dB
Wow & flutter :	Less than 0.45% (RMS) (FWD)
	Less than 0.48% (RMS) (REV)
Distortion :	Less than 3% (PB)
	Less than 10% (REC)
Signal noise ratio :	47±3dB (PB)
	30±8dB (REC/PB)
Noise level :	Less than 0.2mV (DC MIN. PB)
	Less than 0.2mV (AC MIN. PB)
Pinch roller pressure :	160±10 g
Take up torque :	30^{+10}_{-5} g-cm
FF/rewind torque :	90^{+30}_{-20} g-cm
Back tension :	$2.5^{+}_{-0.5}$ g-cm (FWD)
	2.5±1g-cm (REV)

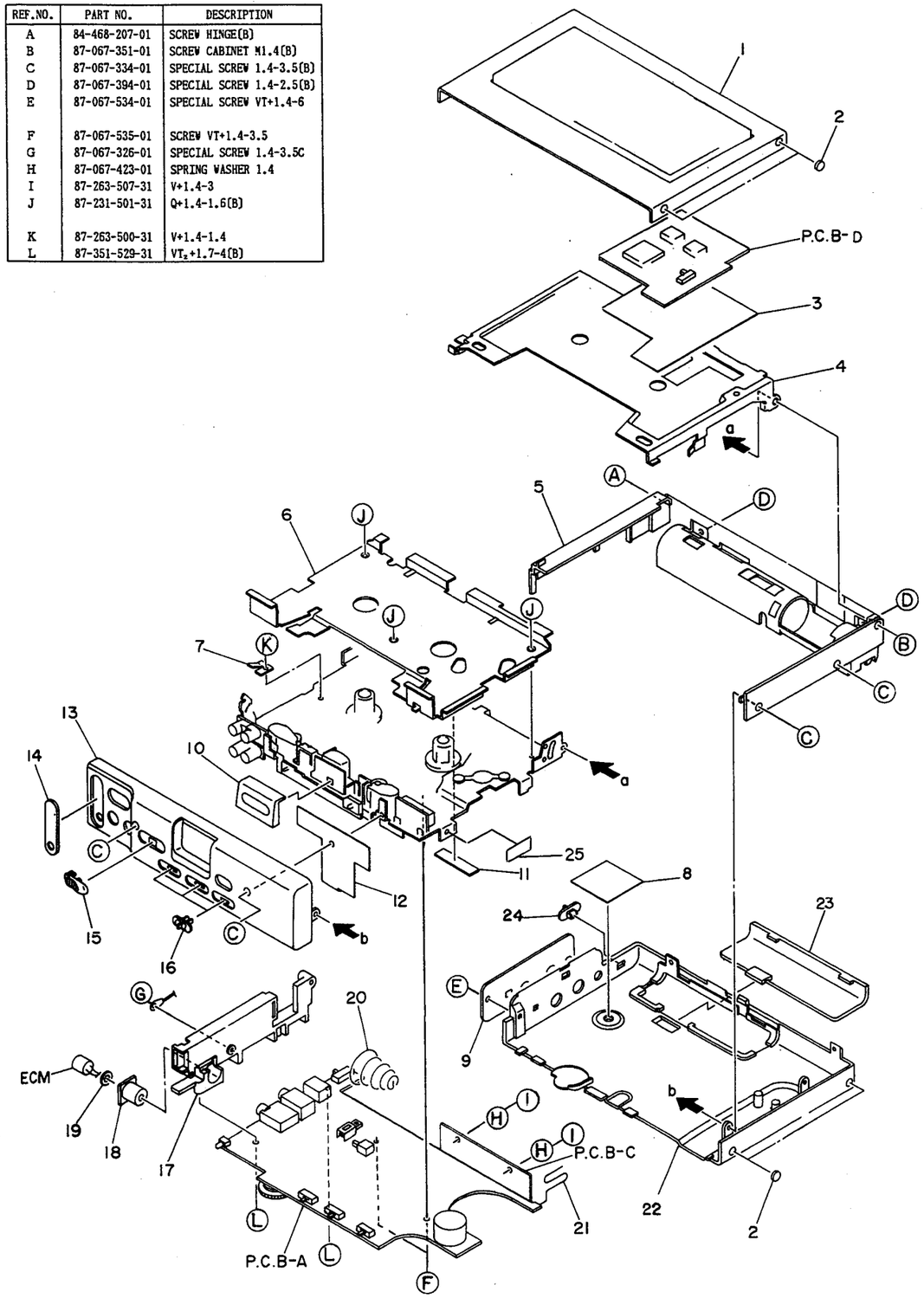
SCHEMATIC DIAGRAM




A MAIN C.B
A MAIN C.B
D G.EQ C.B
SUPER BASS
BASS
TREBLE
S1
POWER
S2
REC/PB
REC↔PB
J3
DC 3V
J2
PHONES
J1
EXT MIC
ECM
MIC
LED1
OPERATION/BATT
VR1
VOLUME
S3
PAUSE
ON
OFF
S4
DOLBY NR
ON
OFF
S5
TAPE
METAL, CrO2 (PB)
NORMAL
M1
(MOTOR)
C MOTOR C.B
MOTOR
LOAD
ADJ.
To A
MAIN C.B
To C
MOTOR C.B
SUM - 3±2 (DC 3V)
B HEAD C.B
AZIMUTH
ADJ.
RPH
S6
DIRECTION
FWD
REV

EXPLODED VIEW－1

REF.NO.	PART NO.	DESCRIPTION
A	84-468-207-01	SCREW HINGE(B)
B	87-067-351-01	SCREW CABINET M1.4(B)
C	87-067-334-01	SPECIAL SCREW 1.4-3.5(B)
D	87-067-394-01	SPECIAL SCREW 1.4-2.5(B)
E	87-067-534-01	SPECIAL SCREW VT+1.4-6
F	87-067-535-01	SCREW VT+1.4-3.5
G	87-067-326-01	SPECIAL SCREW 1.4-3.5C
H	87-067-423-01	SPRING WASHER 1.4
I	87-263-507-31	V+1.4-3
J	87-231-501-31	Q+1.4-1.6(B)
K	87-263-500-31	V+1.4-1.4
L	87-351-529-31	VT_2+1.7-4(B)

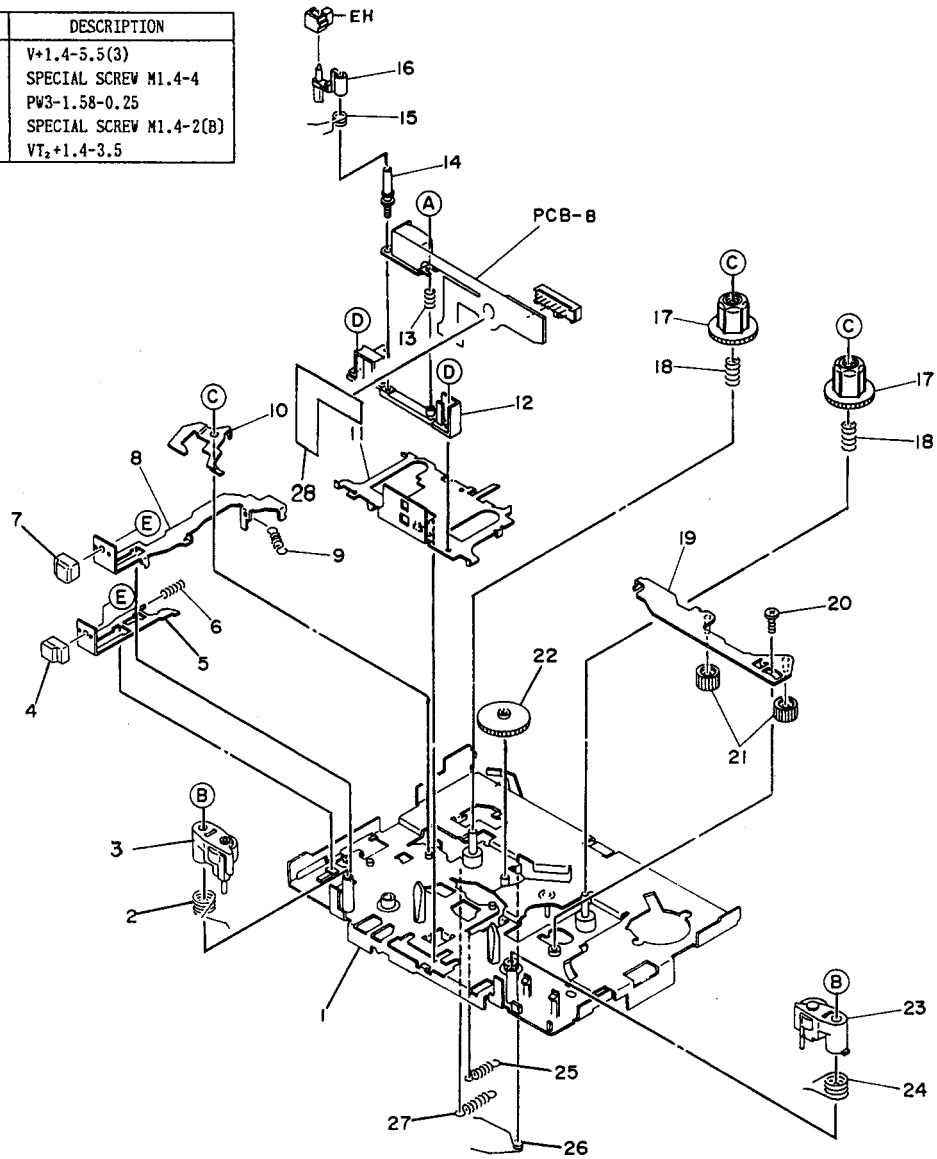


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1-1	★09-027-696-010	LID CASSETTE ASSY	*	1
	1-2	★84-448-010-019	FOOT,RUBBER		4
	1-3	★84-498-204-019	INSULATION SHEET EQ	*	1
	1-4	★84-498-202-019	HOLDER,CASSETTE ASSY	*	1
	1-5	★84-498-006-019	FRAME CENTER	*	1
	1-6	★84-498-018-019	PLATE,DECORATIVE CASSETTE	*	1
	1-7	★84-463-209-010	P-SPRING,POP UP		1
	1-8	★84-400-609-019	SHEET INSULATION B		1
	1-9	★84-498-011-019	PLATE,SIDE	*	1
	1-10	★84-468-042-019	PUSH-BUTTON,PLAY		1
	1-11	★84-468-212-019	MYLAR 20-6		1
	1-12	★84-468-627-219	SHIELD SHEET HEAD		1
	1-13	★84-498-009-019	PANEL,CONTROL	*	1
	1-14	★84-498-010-019	PLATE,CONTROL	*	1
	1-15	★84-468-051-019	KNOB,SLIDE DIRECTION		1
	1-16	★84-468-045-019	KNOB,SLIDE A		3
	1-17	★84-468-203-019	HOLDER,ANTENNA		1
	1-18	★82-652-218-110	HOLDER,ECM		1
	1-19	★82-690-240-019	RUBBER SPACER 5-2,1-1		1
	1-20	★84-468-210-119	C-SPRING,BATTERY		1
	1-21	★84-468-209-019	BATTERY TERMINAL		1
	1-22	★84-498-012-019	CABINET REAR ASSY	*	1
	1-23	84-498-008-019	LID,BATTERY	*	1
	1-24	★84-498-005-019	SHEET,CABINET	*	1
	1-25	★84-468-252-019	MYLAR SHEET 4-7-0.1		1
		★09-027-697-010	APPEARANCE KIT ASSY	*	1

EXPLODED VIEW－2

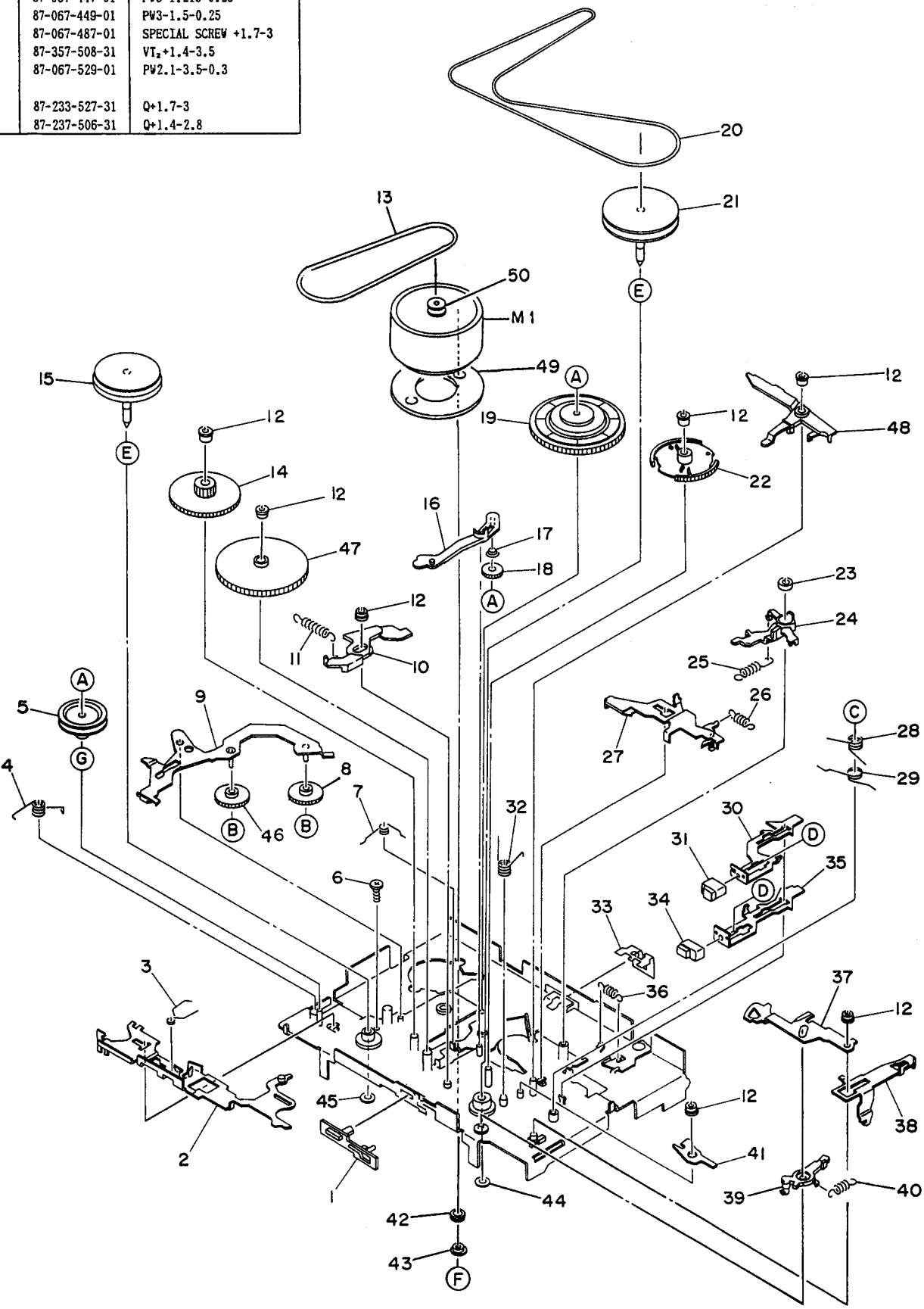
REF.NO.	PART NO.	DESCRIPTION
A	87-268-512-31	V+1.4-5.5(3)
B	87-067-517-01	SPECIAL SCREW M1.4-4
C	87-067-516-01	PW3-1.58-0.25
D	87-067-511-01	SPECIAL SCREW M1.4-2(B)
E	87-357-508-31	VT_2+1.4-3.5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	2-1	★86-541-201-610	OUTSERT ASSY AR		1
	2-2	★86-541-338-010	T-SPRING,PINCH R P		1
	2-3	86-541-218-110	PINCH LEVER R ASSY		1
	2-4	★84-498-016-019	PUSH-BUTTON,STOP	*	1
	2-5	★86-541-465-010	PLATE,BUTTON STOP		1
	2-6	★86-541-329-010	C-SPRING,STOP		1
	2-7	★84-498-015-019	PUSH-BUTTON,REC	*	1
	2-8	★86-541-266-110	PLATE,BUTTON REC A		1
	2-9	★86-541-312-110	E-SPRING,REC LOCK		1
	2-10	★86-541-277-110	LEVER,REC LOCK		1
	2-11	★86-541-270-610	CHASSIS,SLIDE A		1
	2-12	★86-541-283-110	TAPE GUIDE		1
	2-13	★86-541-318-110	C-SPRING,AZIMUTH		1
	2-14	★86-541-369-019	SCREW EH M1.4		1
	2-15	★86-541-344-010	T-SPRING,EH LEVER		1
	2-16	★86-541-287-010	LEVER EH		1
	2-17	★86-541-236-010	GEAR,REEL PLATFORM		2
	2-18	★86-541-328-010	C-SPRING,REEL PLATFORM		2
	2-19	★86-541-221-210	PLATE FR ASSY		1
	2-20	★86-541-383-010	SCREW FR		1
	2-21	★86-541-244-010	GEAR FR		2
	2-22	★86-541-239-010	GEAR REW		1
	2-23	86-541-216-110	PINCH LEVER F ASSY		1
	2-24	★86-541-314-010	T-SPRING,PINCH F R		1
	2-25	★86-541-331-010	E-SPRING,ACTUATING		1
	2-26	★86-541-347-110	T-SPRING,FR LEVER		1
	2-27	★86-541-336-010	E-SPRING,REC		1
	2-28	★86-541-434-010	MYLAR FLEXIBLE A		1

EXPLODED VIEW—3

REF.NO.	PART NO.	DESCRIPTION
A	87-067-447-01	PW3-1.215-0.25
B	87-067-449-01	PW3-1.5-0.25
C	87-067-487-01	SPECIAL SCREW +1.7-3
D	87-357-508-31	VT_2+1.4-3.5
E	87-067-529-01	PW2.1-3.5-0.3
F	87-233-527-31	Q+1.7-3
G	87-237-506-31	Q+1.4-2.8



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	3-1	*84-498-017-019	KNOB,SLIDE MODE	*	1
	3-2	*86-541-222-310	PLATE,PINCH SELECT ASSY		1
	3-3	*86-541-320-510	T-SPRING,PLAY LEVER		1
	3-4	*86-541-313-010	T-SPRING,PINCH SELECT		1
	3-5	*86-541-231-010	PULLEY RELAY A		1
	3-6	*86-541-435-010	SCREW,PLAY		1
	3-7	*86-541-334-110	T-SPRING,AUTO LEVER		1
	3-8	*86-541-242-210	GEAR,PLAY		1
	3-9	*86-541-219-510	LEVER PLAY ASSY		1
	3-10	*86-541-288-410	LEVER,MODE SELECT		1
	3-11	*86-541-341-010	E-SPRING,MODE CHANGE		1
	3-12	---	COLLAR,PW-BOARD P		7
	3-13	86-541-370-010	BELT A2		1
	3-14	*86-541-240-010	GEAR,SLOW-DOWN		1
	3-15	86-541-401-210	FLYWHEEL ASSY FA		1
	3-16	*86-541-285-110	LEVER,AUTO		1
	3-17	*86-541-325-010	C-SPRING,AUTO GEAR		1
	3-18	*86-541-241-010	GEAR,AUTO		1
	3-19	86-541-206-010	GEAR CLUTCH ASSY		1
	3-20	86-541-368-010	BELT A1		1
	3-21	86-541-402-110	FLYWHEEL ASSY RA		1
	3-22	*86-541-238-410	GEAR,SELECT CAM R		1
	3-23	*84-462-208-110	SPACER,BOSS	HS-J202	1
	3-24	*86-541-292-010	LEVER,REC EJECT AR		1
	3-25	*86-541-297-010	E-SPRING,REC EJECT		1
	3-26	*86-541-332-010	E-SPRING,PLATE LOCK		1
	3-27	*86-541-461-110	PLATE EJECT ASSY A		1
	3-28	*86-541-349-010	T-SPRING,FR BUTTON		1
	3-29	*86-541-339-010	T-SPRING,TRIGGER		1
	3-30	*86-541-467-110	PLATE,BUTTON REW		1
	3-31	*84-498-014-019	PUSH-BUTTON,REW	*	1
	3-32	*86-541-345-110	T-SPRING,SELECT CAM		1
	3-33	*86-541-323-010	P-SPRING,CASSETTE SUPPORT		1
	3-34	*84-498-013-019	PUSH-BUTTON,FF	*	1
	3-35	*86-541-466-010	PLATE,BUTTON FF		1
	3-36	*86-541-330-010	E-SPRING,REC BLOCKING		1
	3-37	*86-541-278-210	LEVER,EH RESET		1
	3-38	*86-541-263-210	PLATE,EJECT		1
	3-39	*86-541-286-010	LEVER,DIRECTION		1
	3-40	*86-541-343-010	E-SPRING,DIRECTION		1
	3-41	*86-541-293-110	LEVER,TRIGGER LOCK		1
	3-42	*86-541-447-010	G CUSHION,MOTOR W		2
	3-43	*86-541-443-010	COLLAR,MOTOR A		2
	3-44	*87-034-739-019	SOMA SHEET 1.63-3.2-0.3 CUT		1
	3-45	*87-067-555-010	SOMA SHEET 3-1.5-0.3 CUT		1
	3-46	*86-541-250-010	GEAR,PLAY H		1
	3-47	*86-541-237-110	GEAR,AUTO CAM		1
	3-48	*86-541-284-210	LEVER,TRIGGER		1
	3-49	*87-038-078-019	SHIELD PLATE		1
	3-50	*86-541-442-010	MOTOR PULLEY A3		1

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1	*84-498-901-019	INSTRUCTION BOOKLET	*	1
	2	86-340-065-010	EAR PAD (BK)(Y1)		2
	3	87-041-056-010	MIC CM-S20		1
	4	87-048-138-019	HP-09K (Y1)		1
	5	87-048-153-019	HP-M16 (Y,YU)		1
	6	*87-080-025-019	CLIP BELT ASSY		1